

ABSTRACT

Full-mesh WDM transmission units, each of which includes n number of interfaces and is capable of establishing a bidirectional full-mesh communication between all of the interfaces using wavelength paths based on a wavelength division multiplexing technique, are connected in a multistage tree-shaped structure by internetwork connection units through edge-packet transfer units connected to the respective interfaces. Therefore, it is possible to hold a direct communication between user terminals connected to the edge-packet transfer units of the same full-mesh WDM transmission unit, and to realize scalability by a multistage connection configuration.